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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	**Application No.**	**Applicant(s)**	
	10/712,428	JOSKIN ET AL.	
	Examiner	**Art Unit**	
	ERICK REKSTAD	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 February 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *4,17,27 and 34* is/are allowed.

6)☒ Claim(s) *1-3,5-16,18-26 and 28-37* is/are rejected.

7)☒ Claim(s) *1, 8, 14, 21 and 31* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

This is a Final Rejection for Application no. 10/712,428 in response to the amendment filed on February 11, 2008.

Response to Arguments

Applicant's arguments filed February 11, 2008 have been fully considered but they are not persuasive.

In regards to claims 1, 8, 14, 21 and 31, the Applicants argue Edgar deals with small variations and there are no limits to how large the variations can be in Applicants' method and apparatus. The Examiner notes that the claims are void of any language related to how large the variations are. Thus it is viewed by the Examiner that the Applicants are arguing limitations which are not presented in the claims.

The Applicants argue that:

> Applicants' method and apparatus is for real time resampling with the relative speed and camera rate not necessarily related. That is Applicants apparatus keeps up with the data rate. Edgar, varies the relative speed to accommodate the ability to accept and/or process the data.

The Examiner notes that the claims are void of any language related to the relative speed and camera rate not being related. It is further noted that the Applicants' disclosure fails to define “real time” resampling. Therefore, “real time” is not limited to the Applicants’ argued definition of keeping up with the data rate. Real time is viewed by the Examiner to be the processing of the data as it is received versus a system which stores all data for later processing. Edgar is viewed to teach a real time method (Col 2 Lines 7-27).

The Applicants' argue that Edgar inherently does not describe a real-time process, relying on Column 6 Lines 46-59 and Column 10 Lines 55-59 for support. The Examiner respectfully disagrees. Column 6 Lines 46-59 of Edgar is related to an alternative embodiment in which the connection between the computer and the scanner is a serial connection (Col 6 Lines 44-45). The scanner adapts the scanning in order to accommodate the limitations of the serial port (Col 6 Lines 45-49). It is further noted that the computer is used for post processing of the corrected images (Col 5 Lines 64-67). Edgar further teaches the computer stalls the scanner because the computer is too busy (Col 10 Lines 43-50). Therefore the Applicants' argument is not persuasive since the slowing of the scanner is related to the alternative embodiment of a connection with a computer using a serial port.

The Applicants further argue:

> at the time of Edgar's invention, convolvers that were extremely fast, even video rate, and that could carry out real time convolutions were certaintly available and would be known to those in the art, e.g., to an inventor at IBM, Edgar's assignee, so that Edgar's not including real-time hardware, but rather choosing to have hardware that slows down the scanning to reduce the rate of data collection so that their computer can keep up shows that Edgar teaches away from keeping up with the data.

The Examiner respectfully disagrees with the Applicants' reasoning. Edgar providing an alternative means of transfering image data does not teach away from real-time processing but adds the ability to work with cheaper and slower hardware such as that in a business, home or school (Col 1 Lines 33-46). As shown above, the limiting factor of the system is the computer connected for post processing, not the scanner.

The Applicants argue that Edgar does not teach the direct calculation. Since the claim is void of any direct calculation, the Examiner views the argument as moot.

The Applicants argue that Edgar does not accommodate both upscaling and downscaling, but only downscaling. The Applicants point to the pre-scaling step depicted in Fig.16 for support of the argument. The Examiner respectfully disagrees. The Applicants have focused on only one step in the full processing of the scanner. The scanner performs three steps (102, 105 and 107) as shown in Figure 4. The Lengthwise scale process performs undersamping or oversampling as shown in Figure 9C.

In regards to claims 2, 9, 15, 22, and 32, the Applicants state Edgar teaches away from carrying out such a direct calculation of a weighted sum of the accepted line-scan data sets. The Examiner respectfully disagrees. Edgar teaches the image data is calculated as a weighted sum of data of the accepted line-scan data sets as shown in Figure 8A (Col 14 Lines 29-45).

In regards to claims 3, 10, 16, 23, and 33, the Applicants rely on the above arguments for claims 1 and 2. Therefore the Applicants' arguments have been responded to.

In regards to claim 21, the Applicants argue Edgar is silent on the aspect of producing a web-rate signal related to the accepted measure of relative speed by a scaling factor. The Examiner respectfully disagrees. As stated by the Applicants, Edgar teaches the signaling to the motor in order to adjust the speed of the substrate. The signal to the motor is viewed by the Examiner to be the web-rate signal since it

controls the rate of the substrate and is related to the accepted measure of relative speed by a scaling factor (Col 7 Lines 55-60).

The Applicants further argue that there is no interface between the resampler and a computer because the computer is Edgar's resampler. The Examiner respectfully disagrees. As shown in Figure 2B, the resampling is performed by the scanner (30) which is connected to a computer (70) through an interface (47) (Col 5 Lines 13-16 and 19-20).

In regard to Applicants arguments related to claim 25, the Applicants rely on previous arguments and therefore the arguments have been responded to.

In regards to the Applicants arguments related to the rejection based on Van Tyne et al., the Applicants argue Van Tyne fails to teach or suggest a real-time resampler. The Examiner respectfully disagrees. Van Tyne teaches the upsampling and downsampling the line-scan data sets (Col 16 Lines 29-51). Van Tyne further teaches the system as a replacement for changing the exposure time (Col 16 Lines 39-42). Van Tyne further teaches it is well known that the changing of the exposure time is difficult to perform in a real time mode (Col 16 Lines 42-46). Thus Van Tyne suggests the system is used for a real time mode. Further, as noted by the Examiner above, the Applicants' disclosure fails to define “real time” resampling. Therefore, “real time” is not limited to the Applicants’ argued definition of keeping up with the data rate. Real time is viewed by the Examiner to be the processing of the data as it is received versus a system which stores all data for later processing.

The common knowledge or well-known in the art statement of claim 25 is taken to be admitted prior art because applicant either failed to traverse the examiner's assertion of official notice or that the traverse was inadequate.

Claim Objections

Claims 1, 8, 14, 21, and 31 are objected to because of the following informalities: the claims state the upsampling and downsampling. The disclosure provides a definition of oversampling and undersampling (Paragraph [0071]). It is suggested by the Examiner to amend the claims by replacing upsampling and downsampling with oversampling and undersampling, in order to maintain scope and clarity. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 3, 5-16, 18-24, 29-33, 35, 36 and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 5,608,538 to Edgar et al.

[claim 1]

As shown in Figure 4, Edgar teaches the resampling, at a requested resolution, in order to adjust for geometric distortions and jitter in a scanned image (Col 1 Lines 37-41, Lines 54-55 and Lines 60-64).

The method for the resampling is shown in Figure 3 and comprises:

Accepting in real time line-scan data sets at a camera rate from a line-scan camera (Step 100), each line-scan data set being of an object imaged for a fixed exposure time and moving at a relative speed in relation to the line-scan camera (Col 7 Lines 18-21). Note, real time is viewed by the Examiner to be the processing of the data as it is received versus a system which stores all data for later processing. Edgar is viewed to teach a real time method (Col 2 Lines 7-27).

Accepting a measure of the relative speed between the line-scan camera and the object being imaged by the line-scan camera (Steps 111 and 113) (Col 8 Lines 4-13).

Resampling the line-scan data sets in real time to produce upsampled or downsampled resampled line image data sets at a desired sampling distance (Steps 102, 107 and 115), the resampling being a function of the camera rate , the measure of relative speed and the desired sampling distance (Col 7 Lines 60-65, Col 8 Lines 28-35 and Lines 40-43).

Edgar further teaches the resampling carries out real-time upsampling or downsampling to the desired sampling distance, and adjusts in real time for variations in relative speed to produce faithfully exposed data that is either upsampled or downsampled compared to the line scan data sets according to the relative speed and the desired sampling distance (Col 14 Lines 1-24 and 29-45, Col 15 Line 62-Col 16 Line 8, Figs. 8A-8B and 9C).

[claims 2, 15, 22, and 32]

As shown in Figures 8A and 8B, Edgar teaches the method of claim 1, wherein there is a resampling time (281) corresponding to each resampled line image data set,

and wherein the resampling produces a resampled line image data set, each data point in the resampled line image data set being calculated as a weighted sum of data of the accepted line-scan data sets that are partially or completely accepted during the resampling time corresponding to the resampled line image data set (Col 14 Lines 26-56), the weightings a function of the relative speed such that a first proportion of a first accepted line-scan data set is weighted less when the relative speed is slower than a second proportion of a second accepted line-scan data set corresponding to when the relative speed is faster (Col 14 Lines 37-44).

[claims 3, 10, 16, 23, and 33]

In view of the objection of the claim, claim 3 is rejected as follows. As shown above for claim 2, Edgar teaches the use of a weighted resampling. Edgar further teaches the weighting is a function of the proportion of overlap in the relative motion direction of the accepted line-scan data set with the spatial resampling period of the particular resampled line image data set (Col 14 Lines 40-44).

[claims 5, 11, 18, 28 and 35]

As shown in Figure 10 A, the position is provided with a time stamp (410) and a position indicator (407). These pulses are provided to the tracker for an indication of relative speed (Col 8 Lines 9-18).

[claims 6, 12, 19, 29, and 36]

Edgar teaches the scanning is controlled by the DSP (Col 5 Lines 30-33). Edgar further teaches the code is stored in RAM so that it may be changed (Col 5 Lines 34-38).

[claims 7, 13, 20, 30 and 37]

As shown in Figure 5A, Edgar teaches the use of the nearest neighbors to perform the resampling (Col 9 Lines 1-22).

[claim 8]

As shown in Figure 2B, Edgar teaches an apparatus for performing the method of claim 1 (Col 5 Lines 30-38). The Apparatus performs the steps as depicted in Figure 3. As described above for claim 1, Edgar teaches means for accepting line-scan data sets at a camera rate from a line-scan camera (Step 100), each line-scan data set being of an object imaged for a fixed exposure time and moving at a relative speed in relation to the line-scan camera (Col 7 Lines 18-21).

Edgar further teaches means for resampling the line-scan data sets to produce resampled line image data sets at a desired sampling distance (Steps 102, 107 and 115), the resampling being a function of the camera rate , the measure of relative speed and the desired sampling distance (Col 7 Lines 60-65, Col 8 Lines 28-35 and Lines 40-43).

As shown in Figure 9C, Edgar further teaches the resampling is adjusted in real time for variations in relative speed to produce faithfully exposed data that is either upsampled or downsampled compared to the line scan data sets according to the relative speed and the desired sampling distance (Col 7 Line 66-Col 8 Line 22, Col 15 Line 62-Col 16 Line 8).

[claim 9]

As shown above for claim 2, Figures 8A and 8B teach a resampling time (281) corresponding to each resampled line image data set, and wherein the resampling produces a resampled line image data set, each data point in the resampled line image data set being calculated as a weighted sum of data of the accepted line-scan data sets that are partially or completely accepted during the resampling time corresponding to the resampled line image data set (Col 14 Lines 26-56), the weightings a function of the relative speed such that a first proportion of a first accepted line-scan data set is weighted less when the relative speed is slower than a second proportion of a second accepted line-scan data set corresponding to when the relative speed is faster (Col 14 Lines 37-44).

[claim 14]

As shown above for claims 1 and 8, Edgar teaches the method and apparatus for performing a data conditioner (100), an encoder (111 and 113), and a resampler (102, 107, 115). As shown in Figure 3, these steps are coupled to one another and are further run by a scanning unit (30, Fig. 2B).

[claim 21]

As shown in Figure 2B, Edgar teaches an apparatus for performing the method of claim 1 (Col 5 Lines 30-38). The Apparatus performs the steps as depicted in Figure 3. As described above for claim 1, Edgar teaches a data conditioner for accepting in real time line-scan data sets at a camera rate from a line-scan camera (Step 100), each line-scan data set being of an object imaged for a fixed exposure time and moving at a relative speed in relation to the line-scan camera (Col 7 Lines 18-21).

A rate converter to accepting a measure of the relative speed between the line-scan camera and the object being imaged by the line-scan camera (Steps 111 and 113) (Col 8 Lines 4-13). The rate converter further produces a web-rate signal related to the accepted measure of relative speed by a scaling factor (Col 7 Lines 55-60).

Edgar further teaches a real-time resampler coupled to the data conditioner and to the rate converter, the resampler to resample in real-time the line-scan data sets to produce upsampled or downsampled line image data sets at a desired sampling distance (Steps 102, 107 and 115), the resampling being a function of the camera rate, the measure of relative speed and the desired sampling distance (Col 7 Lines 60-65, Col 8 Lines 28-35 and Lines 40-43).

Figure 3 further depicts an image store (109) coupled to the resampler to accept the sets of line image data (Col 8 Lines 43-48).

As shown in Figure 2B, an interface (47) between a computer system and the rate converter, the resampler, and image store to provide for transferring the resampled line image data sets to the computer system, and for setting the scaling factor and desired sampling distance (Col 5 Lines 19-20 and 23-29, Col 6 Lines 57-59, Col 7 Lines 2-3, Col 12 Lines 58-60, Col 14 Line 65-Col 15 Line 4).

Edgar further teaches the resampling carries out real-time upsampling or downsampling to the desired sampling distance, and adjusts in real time for variations in relative speed to produce faithfully exposed data that is either upsampled or downsampled compared to the line scan data sets according to the relative speed and

the desired sampling distance (Col 14 Lines 1-24 and 29-45, Col 15 Line 62-Col 16 Line 8, Figs. 8A-8B and 9C).

[claim 24]

As shown in Figure 2B, the resampler is a DSP (48) which performs the stored instructions in the RAM (49) (Col 5 Lines 27-33, Col 7 Lines 9-11).

[claim 31]

Edgar teaches the software to control the apparatus are stored in RAM (Col 5 Lines 47-52, Col 6 Lines 60-61). This code performs the method of claim 1 (Col 7 Lines 9-18, Figs. 2B and 3).

Claims 1, 2, 5, 6, 8, 9, 11, 12, 14, 18, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 4,170,419 to Van Tyne et al.

[claim 1]

As shown in Figure 1, Van Tyne teaches a web inspection system. The system includes the use of an inspection head assembly (50) which contains line scan cameras(160) (Col 5 lines 65-68 and Col 10 Lines 23-32).

As shown in Figures 16 and 17, Van Tyne teaches the block diagram of the basic electrical circuitry of the web inspection system. Van Tyne further teaches the circuitry performs the method of:

Accepting line-scan data sets at a camera rate from a line-scan camera, each line-scan set being of an object imaged for a fixed exposure time and moving at a relative speed in relation to the line-scan camera (Col. 15 Line 56-Col 16 Line 28 and

Col 16 Lines 46-51) Note: Van Tyne specifically teaches the camera rate (Col 16 Lines 13-16) and fixed exposure time (Col 16 Line 46-51).

Resampling the line-scan data sets to produce resampled line image data sets at a desired sampling distance, the resampling being a function of the camera rate (386), the measure of relative speed (400) and the desired sampling distance (10 scans per linear inch) (Col 16 Lines 21-28, Col 17 Lines 4-9 and Lines 18-50).

Van Tyne further teaches the resampling adjusts for variations in relative speed to produce faithfully exposed data (Col 16 Lines 39-46).

[claim 2]

Van Tyne teaches the desired resampling time of 1.1 milliseconds which would equate to 10 scans per linear inch of a fabric having a velocity of 150 yards per minute (Col 16 Lines 21-24). Van Tyne further teaches the resampling produces a resampled line image data set that is a weighted sum of the accepted line-scan data sets that are partially or completely accepted during the resampling time corresponding to the resampled line image data set (Col 16 Lines 29-42). Note: The method drops scan lines when the speed is slower (Col 16 Lines 32-38).

[claims 5, 11, 18]

Van Tyne further teaches the relative speed is a set of pulses at a rate proportional to the relative speed (Col 17 Lines 4-9).

[claims 6, 12, 19]

Van Tyne teaches the scan rate is controlled by the control and timing circuitry (360) (Col 15 Lines 57-62, Col 16 Lines 16-24). Note, the counter (382) and oscillator

(380) control the timing signals and therefore it would be inherent that a change of either of these values would change the exposure time.

[claim 8]

As shown above for claim 1, Van Tyne teaches the web scanning method is performed by an apparatus (Fig. 1) which contains the processes as shown in Figure 16.

The processes include a means for accepting line-scan data sets at a camera rate from a line-scan camera, each line-scan data set being of an object imaged for a fixed exposure time and moving at a relative speed in relation to the line-scan camera (360 and 362) (Col 15 Line 65 and Col 16 Lines 13-16).

The processes further include a means for resampling coupled to the means for accepting, the resampling being of the line-scan data sets to produce resampled line image data sets at a desired sampling distance, the resampling a function of the camera, rate, a measure of the relative speed between the line-scan camera and the object being imaged by the line-scan cameral and the desired sampling distance (364, 366, and 368) (Col 16 Lines 24-28).

[claim 9]

Van Tyne teaches the desired resampling time of 1.1 milliseconds which would equate to 10 scans per linear inch of a fabric having a velocity of 150 yards per minute (Col 16 Lines 21-24). Van Tyne further teaches the resampling produces a resampled line image data set that is a weighted sum of the accepted line-scan data sets that are partially or completely accepted during the resampling time corresponding to the

resampled line image data set (Col 16 Lines 29-42). Note: The method drops scan lines when the speed is slower (Col 16 Lines 32-38).

[claim 14]

As shown above for claim 8, Van Tyne teaches an apparatus for performing the method of claim 1. The apparatus further satisfies the requirements of claim 14 as shown below.

Figure 19B further details the sensor head circuitry (362 from Fig. 16). Which contains a data conditioner for accepting line-scan data sets at a camera rate (clk7) (566) (Col 16 Lines 7-16, Col 21 Lines 27-47).

Figure 17 further details the control and timing circuitry (360 from Fig. 16). The control and timing circuitry performs the encoder terminal functions required by claim 14 (Col 17 Lines 4-36).

Figure 19B contains a resampler (568 and 570) to resample line image data at a desired sampling distance (Col 17 Lines 26-30 and Lines 33-35, Col 21 Lines 48-62).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 21, 22, 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 4,170,419 to Van Tyne et al.

[claim 21]

As shown above for claim 14, Van Tyne teaches an apparatus comprising a data conditioner and a resampler as described below.

Figure 19B details the sensor head circuitry (362 from Fig. 16). Which contains a data conditioner for accepting line-scan data sets at a camera rate (clk7) (566) (Col 16 Lines 7-16, Col 21 Lines 27-47).

Figure 19B contains a resampler (568 and 570) to resample line image data at a desired sampling distance (Col 17 Lines 26-30 and Lines 33-35, Col 21 Lines 48-62).

Van Tyne also teaches the use of a rate converter (402 and 404 of Fig. 17) to accept a measure of relative speed between the line-scan camera and the object being imaged by the line-scan camera and produce a web-rate signal (velocity correction code) related to the accepted measure of relative speed by a scaling factor (Col 17 Lines 9-17).

The apparatus further comprises an image store (428-430 in Fig. 18) (Col 21 Lines 52-62).

As shown in Figure 16, an interface (368) is provided between a computer system (60) and the rate converter (contained in 360), the resampler (contained in 362) and image store (contained in 364) (Col 15 Lines 43-54 and 56-58, Col 17 Lines 52-53, Col 21 Lines 27-30). Van Tyne further teaches the starting of the inspection system using the computer (Col 7 Lines 39-40, Col 13 Lines 28-30 and 42-48). It would have been obvious to one of ordinary skill in the art at the time of the invention that by a user selecting to turn on the sensor and start auto scanning the scaling factor and desired

sampling distance would be set as Van Tyne teaches the use of the values while the system is running.

[claim 22]

Van Tyne teaches the desired resampling time of 1.1 milliseconds which would equate to 10 scans per linear inch of a fabric having a velocity of 150 yards per minute (Col 16 Lines 21-24). Van Tyne further teaches the resampling produces a resampled line image data set that is a weighted sum of the accepted line-scan data sets that are partially or completely accepted during the resampling time corresponding to the resampled line image data set (Col 16 Lines 29-42). Note: The method drops scan lines when the speed is slower (Col 16 Lines 32-38).

[claim 28]

Van Tyne further teaches the relative speed is a set of pulses at a rate proportional to the relative speed (Col 17 Lines 4-9).

[claim 29]

Van Tyne teaches the scan rate is controlled by the control and timing circuitry (360) (Col 15 Lines 57-62, Col 16 Lines 16-24). Note, the counter (382) and oscillator (380) control the timing signals and therefore it would be inherent that a change of either of these values would change the exposure time.

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,608,538 to Edgar et al.

[claim 25]

As shown above, Edgar teaches the apparatus of claims 21 and 22. Edgar further teaches one set of processes performed by the resampler to perform a lengthwise scaling (Fig. 8B). These steps include the process of multiplying multiple pixels by a coefficient (309). These pixels are then summed (311). The coefficient is further generated using a sinc function (Col 14 Lines 40-43). As shown in Figure 3, the processes performed by the DSP are coupled to one another. It would have been obvious to one of ordinary skill in the art at the time of the invention to perform the processes of Edgar as separate hardware units as performing operations in software or hardware is well known to one of ordinary skill in the art (Official Notice).

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,608,538 to Edgar et al. in view of US Patent 4,170,419 to Van Tyne et al.

[claim 26]

As shown above, Edgar teaches the requirements of claim 25. Edgar further teaches the images are sampled in order to obtain a desired lengthwise resolution (Col 14 Lines 29-45). Edgar is silent on the use of a camera rate pulse from the line-scan camera used by the resampler as required by claim 26.

As shown above for claims 21 and 22, Van Tyne teaches a similar apparatus for resampling image data (Fig. 16 and 19B). Van Tyne teaches the resampler (362) accepts a set of camera rate pulses (564a-d in Figure 19B) from the line-scan camera indicating each time a line-scan data set is available form the camera. Van Tyne further teaches the converting the web-rate signal to a set of sampling pulses, such that a resampled line of image data is generated each time a sampling pulse is issued (Col 17

Lines 4-14 and Lines 18-29, Col 21 Lines 54-62). Note, the circuitry in Figure 17 takes the timing pulses and produces a corrected time pulses (Col 15 Lines 56-58 and Col 16 Lines 52-55). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the sampling pulses taught by Van Tyne with the apparatus of Edgar in order to provide a signal for the desired resolution (Col 17 Lines 4-14 and 18-29).

Allowable Subject Matter

Claim 4, 17, 27 and 34 are allowed.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERICK REKSTAD whose telephone number is (571)272-7338. The examiner can normally be reached on 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on 571-272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/E. R./
Examiner, Art Unit 2621

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